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EXAMINER
JEN, MINGJEN

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,716	TAYLOR ET AL.	
	Examiner	Art Unit	
	Ian Jen	3609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 03/11/2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 06/30/2004;03/25/2005.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis or the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 -4, 8-12, 16-22, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Abramson et al (US Pat No 7,167,775).

As for Claim 1, Abramson et al shows a method of operating a robot cleaner comprising: using a remote control to provide an indication concerning a room state to a robot cleaner (Fig 1, remote controller 46; column 16, lines 34 -47); and in an automatic cleaning mode, using a processor on the robot cleaner to direct the robot cleaner to clean the room(Fig 23, Control System 1000, Micro Processor 1004, Main Board 1002, Column 17, lines 14 - 18; Column 17, lines 25-26; Column 17 , lines 54 - 62), the processor using the indication to set a cleaning pattern for the automatic cleaning mode(Column 17 ,lines 18 -24 where the processor possess different cleaning patterns; Column 16, lines 41 - 46 where the remote controller transmits various indication toward processor).

As for Claim 2, Abramson et al shows the room state indication is an indication of room size (Fig 24 A, Block 1204, 1206,1220; Fig 1, Contour Sensor 34, 35; Column 16, lines 57-

Column 17, lines 7; Column 18, lines 39 - 62, where the travel mode indicated by the remote control utilize sensor pre-determined area).

As for Claim 3, Abramson et al shows the room state indication is an indication of room dirtiness (Column 16, lines 41 - 46 where the robot cleaner can adapt various cleaning mode which indicates various degree of dirtiness; Column 16, lines 57- Column 17 where the small precise movements mode around small area indicates the level of dirtiness in spot clean level).

As for Claim 4, Abramson et al shows the indication is used to set an overlap in the cleaning pattern (Column 16, lines 34 - 40; Column 16, lines 53 -56).

As for Claim 8, Abramson et al shows the remote control is adapted to switch the robot cleaner between a user controlled mode and the automatic cleaning mode and in the user controlled mode, commands from the remote control are used to direct the robot cleaner(Fig 1 , control panel/user interface 25, remote controller 46; Column 9, lines 12-17 where the control system are both operated the control panel/user interface and remote controller 46; Column 16, lines 57 - 64; Column 18, lines 63 - Column 19, lines 5 where the remote control is used to navigate and instruct robot under the user control).

As for Claim 9, Abramson et al shows a robot cleaner comprising: a cleaning unit on the robot cleaner (Column 4, lines 16 - 16-20); and a processor adapted to receive an indication

concerning a room state from a remote control (Fig 1, remote controller 46; column 16, lines 34 - 47; Column 17 ,lines 18 -24 where the processor possess different cleaning patterns; Column 16, lines 41 - 46 where the remote controller transmits various indication toward processor), in an automatic cleaning mode, the processor is adapted to direct the robot cleaner to clean the room(Fig 23, Control System 1000, Micro Processor 1004, Main Board 1002, Column 17, lines 14 - 18; Column 17, lines 25-26; Column 17 , lines 54 - 62), the processor adapted to use the indication to set a cleaning pattern for the automatic cleaning mode(Column 17 ,lines 18 -24 where the processor possess different cleaning patterns; Column 16, lines 41 - 46 where the remote controller transmits various indication toward processor).

As for Claim 10, Abramson et al shows the robot cleaner of claim 9, wherein the room state indication is an indication of room size (Fig 24 A, Block 1204, 1206,1220; Fig 1, Contour Sensor 34, 35; Column 16, lines 57- Column 17, lines 7; Column 18, lines 39 - 62 where the travel mode indicated by the remote control utilize sensor pre-determined area).

As for Claim 11, Abramson et al shows the robot cleaner of claim 9, wherein the room state indication is an indication of room dirtiness (Column 16, lines 41 - 46 where the robot cleaner can adapt various cleaning mode which indicates various degree of dirtiness; Column 16, lines 57- Column 17 where the small precise movements mode around small area indicates the level of dirtiness in spot clean level).

As for Claim 12, Abramson et al shows the robot cleaner of claim 9, wherein the indication is used to set an overlap in the cleaning pattern (Column 16, lines 34 - 40; Column 16, lines 53 -56).

As for Claim 16, Abramson et al shows the robot cleaner of claim 9, wherein the remote control is adapted to switch the robot cleaner between a user controlled mode and the automatic cleaning mode and in the user controlled mode, commands from the remote control are used to direct the robot cleaner(Fig 1 , control panel/user interface 25, remote controller 46; Column 9, lines 12-17 where the control system are both operated the control panel/user interface and remote controller 46; Column 16, lines 57 - 64; Column 18, lines 63 - Column 19, lines 5 where the remote control is used to navigate and instruct robot under the user control).

As for Claim 17, Abramson et al shows a method of operating a robot cleaner comprising: using a remote control to provide a control indication to a robot cleaner(Fig 1, remote controller 46; column 16, lines 34 -47); and using a processor on the robot cleaner to direct the robot cleaner to clean the room(Fig 23, Control System 1000, Micro Processor 1004, Main Board 1002, Column 17, lines 14 - 18; Column 17, lines 25-26; Column 17 , lines 54 - 62), the processor using the control indication to determine how to control the robot cleaner(Column 17 ,lines 18 -24 where the processor possess different cleaning patterns; Column 16, lines 41 - 46 where the remote controller transmits various indication toward processor).

As for Claim 18, Abramson et al shows the method of claim 17, wherein the control indication is a room state indication (Fig 1, remote controller 46; column 16, lines 34 -47; Column 17 ,lines 18 -24 where the processor possess different cleaning patterns; Column 16, lines 41 - 46 where the remote controller transmits various indication toward processor).

As for Claim 19, Abramson et al shows the method of claim 18, wherein the room state indication is an indication of room size(Fig 24 A, Block 1204, 1206,1220; Fig 1, Contour Sensor 34, 35; Column 16, lines 57- Column 17, lines 7; Column 18, lines 39 - 62, where the travel mode indicated by the remote control utilize sensor pre-determined area).

As for Claim 20, Abramson et al shows the method of claim 18, wherein the room state indication is an indication of room dirtiness(Column 16, lines 41 - 46 where the robot cleaner can adapt various cleaning mode which indicates various degree of dirtiness; Column 16, lines 57- Column 17 where the small precise movements mode around small area indicates the level of dirtiness in spot clean level).

As for Claim 21, Abramson et al shows the method of claim 18, wherein the cotrol indication is a direction indication (Column 16, lines 57 - 64; Column 18, lines 63 - Column 19, lines 5 where the remote control is used to navigate and instruct robot by given specific indication key and the robot cleaner direct its ways to a point proximate to remote controller).

As for Claim 22, Abramson et al shows the method of claim 18, wherein the control indication is used to set an overlap in the cleaning pattern(Column 16, lines 34 - 40; Column 16, lines 53 -56).

As for Claim 26, Abramson et al shows the method of claim 18, wherein the remote control is adapted to switch the robot cleaner between a user controlled mode and the automatic cleaning mode and in the user controlled mode, commands from the remote control are used to direct the robot cleaner(Fig 1 , control panel/user interface 25, remote controller 46; Column 9, lines 12-17 where the control system are both operated the control panel/user interface and remote controller 46; Column 16, lines 57 - 64; Column 18, lines 63 - Column 19, lines 5 where the remote control is used to navigate and instruct robot under the user control).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-7, 13-15, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abramson et al (US Pat No. 7,167,775) in view of Song et al(US Pat No. 6,496,754).

As for Claim 5, Song et al shows the method of claim 1, wherein the automatic cleaning mode includes cleaning a subgrid of predetermined dimensions(Fig 11; Column 6, lines 32 - 47

where four recognition dots 71 constructs a subgrid of predetermined dimensions on base mark 70).

It would be have been obvious for one of ordinary skill in the art to modify the robot cleaner of Abramson et al by adding the reference and recognition dots of Song et al in order to detect current robot position and build a predetermined course.

As for Claim 6, Song et al shows the method of claim 5, wherein the subgrid is cleaned in a serpentine pattern(Fig 12 shows a robot running along a certain course, which is a serpentine pattern course, while recognize its location; Column 10, lines 3-5).

It would be have been obvious for one of ordinary skill in the art to modify the robot cleaner of Abramson et al by adding the predetermined robot cleaning course pattern in order to perform a cleaning or guarding operation in more efficiently fashion and calculate the current position and future destination in more efficient way.

As for Claim 7, Abramson et al shows the method of claim 5, wherein the predetermined dimensions are set based on the indication(Column 17 ,lines 18 -24 where the processor possess different cleaning patterns; Column 16, lines 41 - 46 where the remote controller transmits various indication toward processor; Column 18, lines 54 -63 where the area and distance is preprogrammed into microprocessor).

It would be have been obvious for one of ordinary skill in the art to modify the robot cleaner of Abramson et al by adding the preprogrammed data in the microprocessor of Song et al

in order to fast and continent adapt the remote control indication in various operating environment internally in microprocessor.

As for Claim 13, Song et al shows the robot cleaner of claim 9, wherein the automatic cleaning mode includes cleaning a subgrid of predetermined dimensions (Fig 11; Column 6, lines 32 - 47 where four recognition dots 71 constructs a subgrid of predetermined dimensions on base mark 70).

It would be have been obvious for one of ordinary skill in the art to modify the robot cleaner of Abramson et al by adding the reference and recognition dots of Song et al in order to detect current robot position and build a predetermined course.

As for Claim 14, Song et al shows the robot cleaner of claim 13, wherein the subgrid is cleaned in a serpentine pattern (Fig 12 shows a robot running along a certain course, which is a serpentine pattern course, while recognize its location; Column 10, lines 3-5).

It would be have been obvious for one of ordinary skill in the art to modify the robot cleaner of Abramson et al by adding the predetermined robot cleaning course pattern in order to perform a cleaning or guarding operation in more efficiently fashion and calculate the current position and future destination in more efficient way.

As for Claim 15, Abramson et al shows the robot cleaner of claim 13, wherein the predetermined dimensions are set based on the indication(Column 17 ,lines 18 -24 where the

processor possess different cleaning patterns; Column 16, lines 41 - 46 where the remote controller transmits various indication toward processor; Column 18, lines 54 -63 where the area and distance is preprogrammed into microprocessor).

It would be have been obvious for one of ordinary skill in the art to modify the robot cleaner of Abramson et al by adding the preprogrammed data in the microprocessor of Song et al in order to fast and continent adapt the remote control indication in various operating environment internally in microprocessor .

As for Claim 23, Song et al shows the method of claim 18, wherein the automatic cleaning mode includes cleaning a subgrid of predetermined dimensions(Column 17 ,lines 18 -24 where the processor possess different cleaning patterns; Column 16, lines 41 - 46 where the remote controller transmits various indication toward processor; Column 18, lines 54 -63 where the area and distance is preprogrammed into microprocessor).

It would be have been obvious for one of ordinary skill in the art to modify the robot cleaner of Abramson et al by adding the reference and recognition dots of Song et al in order to detect current robot position and build a predetermined course.

As for Claim 24, Song et al shows the method of claim 23, wherein the subgrid is cleaned in a serpentine pattern(Fig 12 shows a robot running along a certain course, which is a serpentine pattern course, while recognize its location; Column 10, lines 3-5).

It would be have been obvious for one of ordinary skill in the art to modify the robot cleaner of Abramson et al by adding the predetermined robot cleaning course pattern in order to perform a cleaning or guarding operation in more efficiently fashion and calculate the current position and future destination in more efficient way.

As for Claim 25, Abramson et al shows the method of claim 23, wherein the predetermined dimensions are set based on the indication(Column 17 ,lines 18 -24 where the processor possess different cleaning patterns; Column 16, lines 41 - 46 where the remote controller transmits various indication toward processor; Column 18, lines 54 -63 where the area and distance is preprogrammed into microprocessor).

It would be have been obvious for one of ordinary skill in the art to modify the robot cleaner of Abramson et al by adding the preprogrammed data in the microprocessor of Song et al in order to fast and continent adapt the remote control indication in various operating environment internally in microprocessor .

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wallach et al (US Pat No. 6,496,755) shows a robot clean device with predetermined route with subgrid.

Peless et al (US Pat No 6,615,108) shows a robot clean device with predetermined route with subgrid.

Jones et al (US Pat No 6,809,490) shows a robot clean device with predetermined route and remote controller.

Bancroft et al(US Pat No 6,124,694) shows a robot clean device with predetermined route

Song et al (US Pat No 6,841,963) shows a robot clean device with predetermined route along with sub grid and remote controller.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian Jen whose telephone number is 571-270-3274. The examiner can normally be reached on Monday - Friday 8:00-5:00 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on 571-272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

August 1, 2007

Ian Jen

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PRIMARY EXAMINER